“Integrated Aerospace Parts Acquisition Strategy” & “Aerospace Qualified Electronic Component”

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Conference

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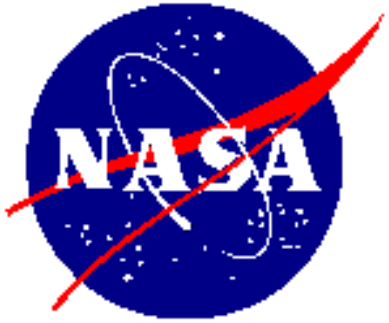

NASA

Aviation & Missile
AMRDEC
Strength Through Technology
RD&E Center

DEFENSE STANDARDIZATION PROGRAM
MAKING SYSTEMS WORK TOGETHER

GEIA
Government Electronics &
Information Technology Association

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

NAVAIR

DoD DMSMS Teaming Group
Working Together To Manage Obsolescence As A Team
Partnering To Reduce Cost
DMSMS

IEC
IECQ

The Good Old Days

- **Military specifications and standards were prevalent**
- **Military parts were abundant**
- **Quality & reliability were known**
- **Part designs and configurations were stable**
- **Other semiconductor devi were expanding rapidly**
- **Moore's Law was operatin**

The 1990s – Big Changes

- **IC suppliers exited military and aerospace markets**
- **DoD Acquisition Reform**
- **Avionics OEMs began using COTS**
- **“Uprating” and “upscreening” became widespread**
- **Device manufacturers warned of COTS “misuse”**
- **Broker and “gray market” sources proliferated**
- **Parts obsolescence - DMS**
- **DMS “fiefdoms” proliferated**
- **DMS activities are tactical – not strategic**

What is Our COTS Parts Policy?

Mil-specs:

Expensive, rigid, reliability and design stability "assured"

COTS:

Cheap, flexible, reliability and design stability "not assured"

Where do we want to be?

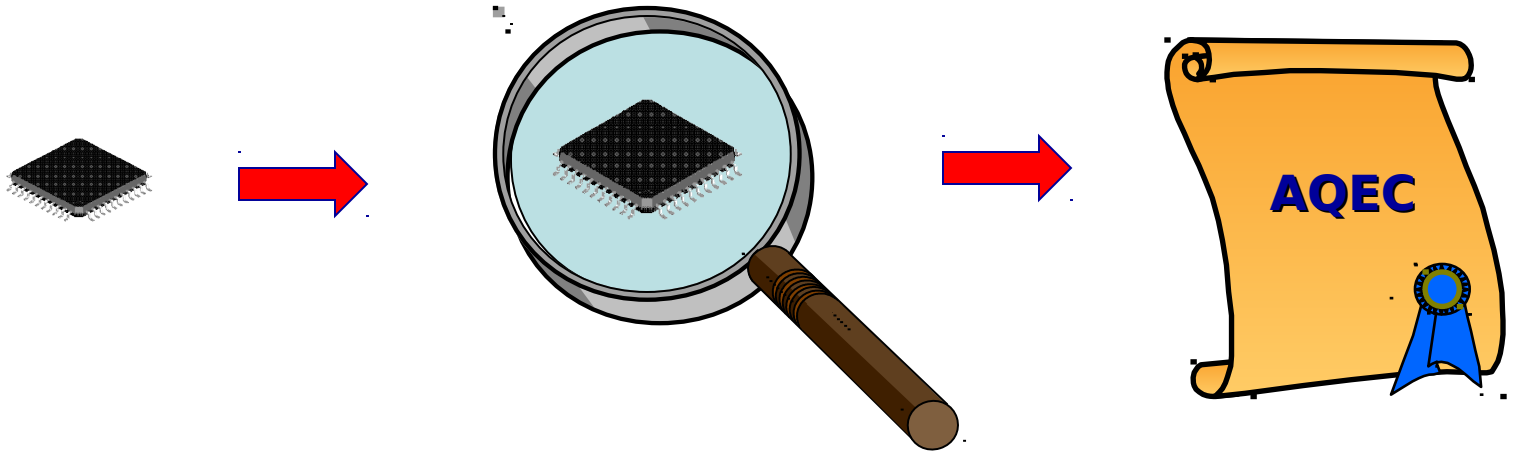
Misguided micro-management

Irresponsible ignorance

Our Response – The Integrated Aerospace Parts Acquisition

- Part I (in place): Electronic Component Management Program (ECMP)
  - Industry documents in place: IEC 62239 and EIA 4899
  - Avionics suppliers document their processes for managing electronic components, in accordance with industry documents
  - Plans are approved by a third party, e.g., IECQ
  - Avionics supplier use approved plans as baseline RFP processes
- Part II (in development): Aerospace Qualified Electronic Component (AQEC)
  - Intended to streamline implementation of ECMP
  - AQEC parts are automatically approved per IEC62239 and EIA 4899

The Enabler: Aerospace Qualified Electronic Components (AQEC)



Start with the device manufacturer's "COTS" component

- ***Assure qualification, quality, reliability, design stability, etc.***
- ***Assess the component's capability to satisfy essential aerospace requirements***
- ***Evaluate part availability and business issues***

If necessary, issue a new part number and data sheet

Integrated Aerospace Parts Acquisition Strategy-IAPAS

- A forward looking approach to avionics and aerospace needs of the future.

- Elements:
  - Electronic Component Management Plan-ECMP IEC 62239 & EIA 4899----In Place
  - Aerospace Qualified Electronic Component-AQEC Specification Under Development

- Status:
  - IEC 62239 & EIA 4899 – Assessments underway in the United States of Avionics suppliers to major Airframe Manufacturers (Boeing, Airbus, Embraer, Northrup Gruman, etc)
  - AQEC – Support from DoD, FAA, NASA, GEIA, IECQ/ECCB, NAVAIR, IC suppliers, OEMs widespread.

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Time Line for Progression:

O To date briefings to OEMs, Associations, DoD entities, FAA, NASA, IC manufacturers, Distributors, Conferences, **G-12/JC-13 (DSCC included**), DoD/DMSMS Teaming Group have occurred….more in work…

O **DSP Director major interview-COTS Journal –March 2003**

O Visits to IC manufacturers – 9 in total have indicated all have components that will meet the "careabouts" outlined in AQEC draft spec. Not all 9 are committed to support at this time.

O OEMs assessed to IEC 62239 and/or EIA 4899….Honeywell, To be completed: Northrop Grumman, Rockwell-Collins, and others being planned

O **NAVAIR is currently the DoD focal point with planned proposal review to the JACG in mid July.**

O **COG Conference-Scotland in 2 weeks provides good European exposure along with JSF and AWACS meetings.**

O Assuming approval and direction from JACG next 12 months would serve as a period of implementation

O DSP offers a potential means of "Standardization" as AQEC

What Do We Need to Do?

- **Accept the reality of the current and future situation – *and leverage it---Socialization***
- **Agree on AQEC standard---Socialization**
- **Collaborate at all appropriate levels---Socialization**
- **Customers (DoD – FAA – NASA – airframe integrators): Issue "mandate" to use AQEC in critical applications, e.g., contract flow-down----------"REQUIRED BY Air Framers/NASA/FAA?"**
- **System designers: Use AQEC where required – no exceptions**
- **Semiconductor device manufacturers: Develop and apply AQEC processes**
- **If necessary, change the rules--- Socialization/Collaboration**

Questions with answers still unclear:

- **Is a parsimonious ‘list’ of AQEC parts needed?**
- **Will IC manufacturer “Data Sheet” plus AQEC designator work?**
- **Will configuration control be sufficient?**
- **How will procurement, inventory, and distribution work?**
- **Will upgradeability-e.g. transition to next generation parts be addressed?**
- **Who controls AQEC system or is it a system rather than an open market as in commercial and consumer microcircuit business today?**
- **What regulations and rules require modification for this to succeed?**

GFB…..PPL…..965 “lookalike”???

- **Can PSMC Committee aid in this effort—if so how?**

IAPAS / AQEC Interest???????

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